

# PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

## SERIES C. JOURNAL OF MEETINGS

VOLUME 16.

No. 7, 1951

### ORDINARY MEETING

WEDNESDAY, 15TH AUGUST, 1951, at 5.30 p.m.

#### AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held in Manchester on 21st-22nd July, 1951.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Additions to the Library.

#### *Presented.*

Barnes, H. F. *Gall midges of economic importance*. Vol. 5. *Trees*. 8vo. London. 1951. [The Publishers.]

British Museum (Natural History). *The cockroach*. 5th edn. 8vo. London. 1951. [Economic Series No. 12.] [The Trustees of the British Museum.]

British Museum (Natural History). *Clothes moths and house moths*. 5th edn. 8vo. London. 1951. [Economic Series No. 14.] [The Trustees of the British Museum.]

British Museum (Natural History). *Ruwenzori Expedition, 1934-5*. Vol. II. 4to. London. 1951.

No. 6. MUSCIDAE. C. SCATOPHAGINAE, ANTHOMYIINAE, LISPINAE, FANNIINAE and PHAONIINAE. By F. I. van Emden. Pp. 325-710.

No. 7. CHLOROPIDAE. By Curtis W. Sabrosky. Pp. 711-828.

No. 8. Brachypterous SPHAEROCIDAE. By O. W. Richards. Pp. 829-851.

[The Trustees of the British Museum.]

Demerec, M., *editor*. *Biology of Drosophila*. 8vo. New York and London. 1950. [The Publishers.]

Edwards, J. Gordon. *A bibliographical supplement to "Coleoptera or beetles east of the Great Plains," applying particularly to western United States*. 4to. San José, California. 1950. [The Author.]

Fourth Desert Locust Experts' Conference. *Proceedings*. Fscp. Cairo. 1951. [Secretary-General of the Conference (Mahomed Hussein Bey).]

- Horion, A. *Verzeichnis der Käfer Mitteleuropas*. 1 Abteilung. 8vo. Stuttgart. 1951. [The Publishers.]
- Hudson, G. V. *Fragments of New Zealand entomology*. 8vo. Wellington. 1950. [Mrs. W. H. Gibbs.]
- Levi Castillo, R. *Atlas de los anofelinos sudamericanos*. 8vo. Guayaquil. 1949. [The Author.]
- Levi Castillo, R. *Los anofelinos de la república del Ecuador*. 8vo. Guayaquil. 1945. [The Author.]
- Levi Castillo, R. *Los mosquitos del género Haemagogus Williston 1896 en América del sud*. 8vo. Cuenca. 1951. [The Author.]
- Norris, K. R. Aestivating eggs of the red-legged earth mite. *Bull. Cwlt. sci. ind. Res. Org.*, **253**, 1950. [Commonwealth Scientific and Industrial Research Organization, Australia.]
- Shepard, Harold H. *The chemistry and action of insecticides*. 8vo. London and New York. 1951. [The Publishers.]
- West, T. F., Hardy, J. E., and Ford, J. H. *Chemical control of insects*. 8vo. London. 1951. [Frontiers of Science Series.] [The Publishers.]
- Wigglesworth, V. B. *Principles of insect physiology*. 4th edn., revised. 8vo. London. 1950. [The Publishers.]

*Purchased.*

- Arrow, Gilbert. *Horned beetles. A study of the fantastic in nature*. Edited by W. D. Hincks. 8vo. The Hague. 1951.
- Lhomme, L. *Catalogue des Lépidoptères de France et de Belgique*. Vol. 2. Pp. 585-904. Le Carriol and Paris. 1948-50.
- Nielsen, Anker. *Contributions to the metamorphosis and biology of the genus Atrichopogon Kieffer with remarks on the evolution and taxonomy of the genus*. 4to. København. 1951. [Det Kongelige Danske Videnskabernes Selskab. Biologiske Skrifter VI no. 6.]
- Thomsen, Mathias. *Weismann's ring and related organs in larvae of Diptera*. 4to. København. 1951. [Det Kongelige Danske Videnskabernes Selskab. Biologiske Skrifter VI no. 5.]
- Verity, Roger. *Les variations géographiques et saisonnières des papillons diurnes en France*. 8vo. Paris. 1947[-51].
- Vidal, J. *Hémiptères de l'Afrique du nord et des pays circum-méditerranéens*. 8vo. Rabat, Paris and London. 1949. [Mém. Soc. Sci. nat. Maroc **48**.]

In addition, separates were presented by Lt.-Col. F. C. Fraser; Department of Zoology, Glasgow University; United States Department of Agriculture; Professor P. A. Buxton, C.M.G., F.R.S.; The Smithsonian Institution; Dr. J. Carayon; Mr. J. Vinson; Companhia de Diamantes de Angola; Dr. H. Cleu; Dr. N. E. Hickin; Dr. J. S. Kennedy; Dr. J. T. Salmon; Commonwealth Institute of Entomology; Dr. J. C. van Hille; Professor W. Roepke; Dr. E. A. Cockayne; Anti-Locust Research Centre; Chief Entomologist, E.A.T.R.O., Shinyanga, Tanganyika; Professor Merle W. Wing; Dr. C. G. M. de Worms; Mr. A. H. Strickland; Mr. Curtis W. Sabrosky; Dr. F. S. Bodenheimer; Forest Research Institute, Dehra Dun; Mr. W. Dwight Pierce; Mr. R. A. Cumber; and Captain T. Dannreuther, R.N.



## 5. Admission of Fellows.

Any Fellow who has not been formally admitted to the Society under Chapter XIV, Section 4 of the Bye-laws and attends the meeting on 15th August, 1951, is requested to inform the Secretary before 5.15 p.m. on that date.

## 6. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

## 7. Communications.

## 1. Miss L. E. Cheesman

## Oriental Origin of the Papuan Insect Fauna.

[ABSTRACT.]

New Guinea and adjacent archipelagoes comprise the zoological sub-region Papuasias, which was raised from a drowned Cretaceous landmass by the Tertiary tectonic movements. There was no subsequent connection with Malaysia, but a land bridge to Asia through the Philippines. The south-east was connected three times with Queensland.

This early geological history of New Guinea is universally accepted, but it conflicts with biological evidence; and if there were no further evidence of land movements would cause insoluble problems. A large landmass raised from the sea, its only continental connection being with Australia, should possess a flora and insect fauna—(1) basically Australian, (2) disharmonious, (3) largely insular in character. On the contrary the flora and insect fauna of Papuasias are basically Oriental, with a strong Australian element, and slight Malaysian element attributable to an identical Asiatic origin, and with a strong neo-endemism due to isolation. Moreover analysis shows that they are harmonious, all important groups being represented.

A feasible explanation is that a very old geanticline on the northern coast, part of which has never been submerged, formed a permanent Asiatic connection from which the new land was colonized.

## 2. Dr. C. B. Williams

## The relation of insect populations to recent weather conditions.

[ABSTRACT.]

Trapping of insects has been carried out at Rothamsted Experimental Station by means of a light trap for four years before the war and four years after. The total captures were about  $1\frac{1}{2}$  million insects on nearly 3,000 nights. A statistical analysis of the numbers caught each night in relation to the weather conditions of that night has enabled quantitative relations between certain weather conditions such as temperature, humidity and wind and the activity of the insects to be obtained.

A further study was then made on the measure of the population (obtained from the mean catch for the month), and the rainfall and temperature of the three preceding months. These relations were calculated for each of the four seasons and formulae obtained whereby, given the rainfall and temperature for any three months, the population could be estimated for the fourth month. These formulae have been checked against actual figures and give a remarkably

close estimate of what is happening in the field. Furthermore, the relations between rainfall and temperature and the population in the different seasons appear to be biologically sound.

---

TEA will be served in the Library before the meeting.

---

## WEEK-END MEETING IN MANCHESTER.

20TH-22ND JULY, 1951.

By invitation of the Council of the University of Manchester the July meeting of the Society was held in Manchester on Saturday and Sunday, 21st and 22nd July, to enable the President, Council and Southern Fellows of the Society to meet Fellows living in the North and other Northern entomologists, including representatives of the Society for British Entomology, the Lancashire and Cheshire Entomological Society, the Manchester Entomological Society, the Raven Entomological and Natural History Society, the Derbyshire Entomological Society and the Entomological Sections of the North-Western Naturalists' Union and the Yorkshire Naturalists' Union.

Approximately forty Fellows and Guests assembled for dinner in Ashburne Hall on Friday evening, 20th July, after which a number of films of entomological interest were shown.

### Saturday, 21st July.

On Saturday morning, 21st July, Fellows of the Society and members of Northern entomological Societies and their guests were received by the Vice-Chancellor of the University of Manchester, Sir John Stopford, M.D., F.R.S., in the Whitworth Hall of the University.

After coffee in the Whitworth Hall, the Ordinary Meeting of the Society was held in the Natural History Lecture Room, Department of Zoology.

---

## PROCEEDINGS OF THE ORDINARY MEETING HELD ON 21ST-22ND JULY, 1951.

Mr. N. D. Riley, President, in the Chair.

Present, 42 Fellows and 38 Visitors.

The minutes of the Ordinary Meeting held on 6th June were confirmed and signed by the President.

The names of the following candidates for election were read for the first time : H. Cookson, S. K. P. Hunter, R. Vernon Joyce, Carmel De Lucca, B.Sc., M.D., E. M. Martin, Professor Atul Chandra Sen, M.Sc., and J. C. D. Watts, B.Sc.

For the second time (taken as read) : A. E. G. Best, R. Couston, R. S. George, E. T. Giles, M.Sc., D. Lovemore, M.Sc., P. Maggs, G. I. de Mercado, F.R.Met.S., and J. E. Treherne, B.Sc.

The Secretary read the names of the following newly elected Fellows of the Society : Dr. L. Broadbent, Rothamsted Experimental Station, Harpenden, Herts ; Miss D. E. Griffin, B.Sc., A.R.C.S., East Malling Research Station, near Maidstone, Kent ; and M. L. Purohit, B.Sc., Government of Madhya Bharat, Central Agriculture Farm, Gwelior, India.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. N. M. Bailey, Mr. P. R. Barratt, Mr. A. Brindle, Miss J. E. Harker, Dr. T. Karabag, Mr. L. N. Kidd, Mr. Leonard Nathan, Dr. E. J. Popham, Mr. E. T. M.



Reid, Mr. W. Ritson and Mr. J. H. Watson, signed the Obligation Book and were admitted Fellows of the Society.

Professor G. C. Varley read a paper on the winter moth and other defoliators of oak, an abstract of which appeared on page 36, and Dr. V. B. Wigglesworth, on behalf of himself and Dr. J. W. L. Beament, read a paper on respiratory mechanisms in insect eggs, an abstract of which appeared on page 37. Both papers were followed by brief discussions, and the meeting adjourned at 12.35 p.m. until 11.0 a.m. the following day.

In the afternoon the Society visited the Zoological Laboratories, by kind permission of Professor H. Graham Cannon, F.R.S., to see the following demonstrations and exhibits :

#### DEMONSTRATIONS.

**Mr. J. G. Blower, Miss M. T. Sewell, Mr. S. R. A. Malek and Mr. K. G. Highnam.** *Recent work on the Arthropod Cuticle.* The demonstration gave a simplified picture of the structure and formation of the Arthropod cuticle in the light of the work of the last twenty years. Microscopic preparations of the cuticles of the Blowfly (*Sarcophaga falcitata* Pand.), the Cockroach (*Periplaneta americana* L.) and other Arthropods were shown. Emphasis was laid on the structure of the epicuticle and its function in relation to the conservation of water. A model of the insect cuticle prepared from gelatin capsules by tanning with quinones and coating with bees-wax was compared with "Neosyl"-treated capsules, with untreated capsules and with capsules which had been only tanned or waxed. The physiology of the hardening process in the Blowfly, the Cockroach and the Cockroach ootheca was shown experimentally and diagrammatically.

**Dr. E. J. Popham.** *Insects of Waterfalls.* The exhibit demonstrated the division of waterfall insects into three groups. (1) Typical terrestrial species which find their way into the drier parts of a waterfall during spells of dry weather, e.g., *Timarcha goettingensis* L. and *Aphodius depressus* Kugelann.

(2) Typical aquatic species (e.g., *Velia currens* Fabricius and *Platambus maculatus* L.) which climb out of water into the damp moss just above the level of the water.

(3) Species which show a variety of adaptations to life on vertical surfaces over which flows a stream of water.

**Miss J. Harker** demonstrated (a) *An apparatus for the field determination of oxygen concentration in water*, in which the volume of chemicals taken in was controlled by a screw, which enabled accurate measurements even in cold weather.

(b) *Environmental adaptation occurring in mayfly nymphs.* A series of specimens of Ephemeroptera larvae was exhibited showing various adaptations to their different habitats. The life cycle of *Ecdyonurus torrentis* Kimmins was shown diagrammatically together with observations on nymphal migration and diurnal rhythms.

#### EXHIBITS.

**Mr. H. G. Allcard.** (1) A bred series of *Sphinx ligustri* L. (2) Specimens of *Celerio euphorbiae* L. from Malta, and a series from Prague which had been bred from pupae.

**Dr. G. W. R. Bartindale, M.A.** (1) British, French and Belgian species of *Carabus* L., and other CARABIDAE. (2) British CARABIDAE (Nebriini, Notiophilini, Elaphrini, Loricerini, SCARATINAE, HARPALINAE pars). (3) Uncommon beetles taken in N.W. England.

**Mr. A. C. Braham.** British and Tropical Arachnida showing new methods of mounting and preservation.

**Mr. A. Brindle.** (1) The following social wasps of N.E. Lancashire : *Vespula germanica* (L.), *V. vulgaris* (L.), *V. rufa* (L.), *V. norvegica* (F.), *V. sylvestris* (Scop.) with samples of the paper of each species except the last-named, showing specific differences between the paper. A specimen of wasp comb with caps removed to show the development of the wasp from the full-fed larva. Diagrams to illustrate the reason for "rings" of caps on cells—the queen working outward with egg laying so that larvae in the same stage are in a ring of cells in the comb, (2) Diptera from a N.E. Lancashire marsh, including TIPULIDAE, EMPIDAE, SYRPHIDAE, RHAGIONIDAE, STRATIOMYIDAE and TABANIDAE. (3) Species of Plecoptera, Ephemeroptera and Trichoptera found along N.E. Lancashire streams and canals.

**Mr. D. Bryce.** (1) Aberrations of *Rhagium bifasciatum* (F.) (Col. CERAMBYCIDAE) taken at Great Harwood, Lancs., 1949-50. (2) Imagines and preserved larvae of TIPULIDAE (Diptera). (3) Specimens of *Lycaena phlaeas* L. (including varieties) taken at Great Harwood, Lancs.

**Mr. Camden Clarke.** (1) *Cicadetta montana* (Scopoli) (Homoptera, CICADIDAE) taken in the New Forest, 1937. (2) *Celerio euphorbiae* L. taken in Derby, 1949. (3) Living *Saperda scalaris* L. (Col., LAMIINAE) taken near Repton. (4) Colour transparencies and photographs taken by Mr. C. E. Brown.

**Mr. S. Coxey.** A selection of interesting Lepidoptera including specimens of (1) *Euproctis similis* with dark brown tails taken near Formby, Lancs., (2) *Notodonta dromedarius* var. *perfusca* taken at Bolton, (3) A series of bred *Spilosoma lutea* f. *radiata*, (4) *Agrotis glariosa* var. *rosea*, (5) a melanic form of *Apatele rumicis* from Bolton, and (6) an albinistic form of *Tholera popularis* from Wiltshire

**Mr. R. C. R. Crewdson.** Lepidoptera from Scotland and Cheshire.

**Mr. G. de C. Fraser.** A selection of interesting Lepidoptera including *Celerio galii* taken in 1888 at Formby, Lancs., *Philudoria potatoria* (including a yellow male), typical northern specimen of *Apatele alni*, *A. leporina* (including varieties *melancepha*, *bradyporina*), *A. praecox* taken at Formby, Lancs., and *Eustroma reticulata*.

**Mr. M. G. Fraser** (on behalf of Messrs. Irvine & Sellers, Ltd.). A collection of beetles imported in timber, with examples of the damage done by them.

**Mr. K. Greenwood.** (1) A bred and assembled series of *Lasiocampa trifolii*, including albinistic species, from Formby, Lancs. (2) *Lasiocampa quercus* var. *callunae* from Grassington, Yorks. (3) Striking forms of *Hydraecia paludis* from Formby and Southport. (4) *Epannis marginaria* from Formby and Delamere (Cheshire) including var. *fusca*.

**Mr. C. F. Griffiths.** (1) The following Longicorn beetles from imported timber, St. Helens, Lancs., area : *Phymatodes testaceus* L., *Cerambyx scopoli* Fuessly, and *Saperda scalaris* L. from German oak ; *Pyrhridium sanguineum* L. from Roumanian oak ; *Monochamus sutor* L. in white deal ; *Monochamus rosenmülleri* Cederhjelm from Polish white spruce ; and an undetermined species of *Strangalia* from Oregon pine. (2) The following beetles taken in Lancashire : *Lincolnian anale* Lesne and *Lyctus parallelopius* Melsheimer in wood of crates from India ; *Leptinotarsa decemlineata* Say found crushed between battens in a timber yard ; and also *Dermestes peruvianus* Castelnau, *Aulonium trisulcum* (Geoffroy in Fourcroy) and *Grynobius excavatus* Kugelann.



**Mr. H. Hanson.** Five drawers from the Baron Bouck collection showing life histories of British butterflies.

**Mr. W. D. Hincks.** (1) Passalid beetles of the genus *Labienus*. (2) Earwigs from the Nimba Mts. (3) A day's catch at Rauris, Austria.

**Father H. Hirst.** Specimens of *Orthosia advena*, *Plusia chrysis*, *Dasychira fascelina*, *Erannis defoliaria* and *Mamestra brassicae* taken at light at Freshfield, near Liverpool.

**Mr. L. N. Kidd.** A selection from the C. G. Hall collection of British Coleoptera.

**Mr. M. J. Leech.** (1) *Acherontia atropos* from the Outer Hebrides. (2) *Lasio-campa quercus* var. *callunae* from the Hebrides. (3) A fine series of *Hydriomena furcata* from Grassington, Yorks. (4) *Drymonia trimaculata* from Witherslack. (5) *Callajoppa exaltatoria* Panzer parasitic on *Smerinthus ocellatus* (new to Lancashire and Cheshire). (6) *Calosoma inquisitor* L. from Formby, Lancs.

**Mr. H. N. Michaelis.** Species of the genus *Coleophora* from Lancashire and Cheshire, and various species of Lepidoptera from the same district showing dark coloration.

**Mr. Leonard Nathan.** (1) A few specimens of *Coenonympha tullia* from the Delamere district, 1915. (2) British and foreign specimens of many orders of insects.

**Mr. W. Reid.** Interesting aberrations of British Lepidoptera including a remarkable new form of *Spilosoma lutea*, and many melanic varieties taken at a light trap in Sheffield.

**Mr. W. Ritson.** A collection of ten species of ICHNEUMONIDAE of the genera *Exetastes*, *Promethus*, *Pycnocyrtus* and *Ichnoceros*.

**Mr. S. Shaw.** (1) Carabid beetles of Spurn Peninsula. (2) A selection of garden insects.

**Mr. B. B. Snell.** (1) A cabinet drawer of *Eupithecia* species. (2) Selected Lepidoptera from thirty years collecting, including *Depressaria astantiae* from North Wales, and a bred *Leucoptera susinella* H.S. from Aviemore.

**Mr. F. B. Stubbs.** A selection of plant galls collected the same morning near Manchester.

**Professor G. C. Varley.** An exhibit showing the food chain of the Winter Moth and Green Tortrix on oak at Wytham Wood, Oxfordshire, and a collection of Lepidoptera from oak in the same locality, and illustrating his communication (see above, p. 36).

**Dr. Roger Warwick.** Living British Lepidoptera in various stages, including living imagines of *Vanessa urticae*, *V. io*, *Limenitis camilla*, *Argynnis paphia*, *Aphantopus hyperantus*, *Melanargia galathea* and the dwarf subspecies of *Eumenis semele*, the latter four of which were actively laying eggs under artificial light. Amongst about 20 species of living larvae were *Smerinthus ocellatus* and *S. populi*, *S. pavonia* (spinning cocoons), *Orgyia recens*, *Papilio machaon*, *Vanessa cardui* (from Jersey) and *Gonepteryx rhamni* (pupating). The larvae of *O. recens* were derived from a stock the parents of which had been treated with X-rays with consequent retardation of growth. Pupae of many species were also shown.

**Mr. J. H. Watson.** (1) *Papilio machaon* from Rampart House, Yukon Territory, Canada, 67.50 N., this being the most northerly record for this species, and a specimen from the Ramparts, Alaska. (2) A gynandromorph of *Colias*

*pelidne*. (3) A photograph of *Antherea mylitta* showing a normal chestnut coloured male and a normal golden female.

**Mr. G. Woods.** Photographs of Rhopalocera and Heterocera including life histories of *Lymantria dispar* (L.), *Selenia bilunaria* (Esper), *Colias crocea* (Fourcroy), *Nonagria typhae* (Thunberg), *Lycaena phlaeas* (L.) and *Celastrina argiolus* (L.).

**Dr. C. G. M. de Worms.** A series of butterflies and moths, including local forms and races occurring in Northern England and Scotland.

Exhibits were also made by several other members of Northern Societies.

In the evening Fellows and guests were received by the President and Mrs. Riley before dinner in the University Refectory, at which Professor and Mrs. Graham Cannon, Mr. R. U. Sayce, Dr. C. G. M. de Worms and Mrs. de Courcy Fraser, Mr. Camden Clarke and Miss Rickards were the guests of the Society. Professor Graham Cannon, representing the University, made an entertaining speech of welcome. In replying the President thanked all those who had contributed to make this first country meeting of the Society such a memorable and enjoyable occasion.

### Sunday, 22nd July.

The adjourned meeting was resumed on Sunday at 11.15 a.m. Mr. R. U. Sayce, Keeper of the Manchester Museum, welcomed Fellows and guests in the Council Chamber of the Museum.

Mr. G. F. Woods signed the Obligation Book and was admitted a Fellow of the Society.

**Mr. C. Crisp** and **Dr. Llewellyn Lloyd** gave a paper on some respiratory devices in mud-dwelling Tipulid larvae. Mr. Crisp said that in 1944 Dr. Lloyd (*Nature*, 154 : 597) had noted that the association of flies characteristic of sewage filters formed a component of the fauna of the fresh-water mud flat. In order to define their status in this highly mixed assembly, in contrast to their dominance in the filters, a systematic study of the insects breeding in a small mud flat was proceeding. The methods of study comprised routine collections of insects resting on trunks above the flat ; breeding from small and large samples of the mud ; flotations in magnesium sulphate solution to recover early stages ; attempts to breed through the forms so recovered.

Some 25 species of Tipulid larvae had so far been defined, but few of them had been identified. Though dwelling in a seemingly uniform environment their respiratory devices showed many different adaptations. The larvae were metapneustic and the two terminal spiracles were sometimes apparently unprotected, in other cases surrounded by short blunt lobes of varying number, or the lobes might be longer, fringed with short hair or provided with manes that almost surpassed the body in length. These last enclosed an abundant air store as the larvae burrowed.

The demonstration included photographs of the mud flat, preparations of the larvae and drawings of the respiratory devices, and a range of the living larvae.

**Dr. E. J. Popham** read a paper on the Fauna Hygropetrica. He said that an interesting and specialized insect fauna was to be found on vertical surfaces of rock where water also occurred. The larvae of the Nematoceran *Thaumalea testacea* Ruthe were particularly abundant where there was a thin film of slowly moving water. These larvae fed on encrusting algae and were able to climb upwards against the current by means of the head and prolegs. Where the flow



of water was more rapid, *Thaumalea testacea* was replaced in some regions by the larvae of the Caddis fly, *Tinodes assimilis* McLachlan, which builds small tunnels of detritus in the irregularities of the rock surfaces.

In later stages of colonization a variety of filamentous algae were to be found, while the final stages were marked by the appearance of liverworts and mosses and the accumulation of soil particles. In such microhabitats a rich and varied fauna was to be found in which dipterous larvae and Coleoptera (particularly Staphylinids) were some of the most abundant. Specimens of some of the species mentioned were shown.

Short discussions followed these papers.

**Mr. G. S. Kloet** gave an entertaining and instructive talk on entomological illustration, and demonstrated some common errors made by beginners, giving hints by which drawing technique could be improved.

After lunch at Ashburne Hall, at which 44 Fellows and Visitors were present, a visit was paid to Manchester Museum, where there was an exhibit of collections by the Entomological Department. These exhibits included selections from the Longsdon Collection of Papilios, the Spaeth Collection of Cassidine beetles, and the general collection of British Coleoptera. The Harry Britten Collection of British Insects and a historic specimen of the Manchester *Tinaea* (*Schiffmuelleria woodiella* (Curtis)) were displayed. The reserve collections of the Museum were also on view.

E. B. BRITTON, *Hon. Secretary.*

---

The next meeting will be held on 3rd October, 1951.

## NOTICES

In addition to the *Transactions and Proceedings* (Series A, B and C), the following publications are available on application at the Society's rooms:—

THE GENERIC NAMES OF BRITISH INSECTS, WITH CHECK LISTS OF THE SPECIES, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London, with the assistance of the Department of Entomology of the British Museum (Natural History):—

Part 1. Recommendations relating to the publication of the Committee's Reports								Price	
2.	Rhopalocera	..	..	..	..	..	..	3s.	6d.
3.	Odonata	..	..	..	..	..	..	3s.	6d.
4.	Neuroptera	..	..	..	..	..	..	3s.	6d.
5.	Hymenoptera Aculeata	..	..	..	..	..	..	15s.	0d.
6.	Coleoptera Carabidae	..	..	..	..	..	..	10s.	0d.
7.	Coleoptera Hydradephaga	..	..	..	..	..	..	5s.	0d.
8.	Hemiptera Heteroptera	..	..	..	..	..	..	39s.	0d.
9.	Coleoptera Staphylinidae	..	..	..	..	..	..	40s.	0d.

### HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS.

The Society has undertaken the issue of a series of publications intended to provide illustrated Keys to the whole of the British Insect Fauna so far as this is possible.

It is proposed to cover this field in a series of ten volumes, arranged as follows:—

- |  |  |
|--|--|
| <p>I. Part 1. General Introduction.</p> <p>2. Thysanura.</p> <p>3. Protura.</p> <p>4. Collembola.*</p> <p>5. Dermaptera and Orthoptera.†</p> <p>6. Plecoptera.†</p> <p>7. Psocoptera.*</p> <p>8. Anoplura.</p> | <p>Part 9. Ephemeroptera.†</p> <p>10. Odonata.†</p> <p>11. Thysanoptera.*</p> <p>12. Neuroptera.</p> <p>13. Mecoptera.</p> <p>14. Trichoptera.</p> <p>15. Strepsiptera.</p> <p>16. Siphonaptera.</p> |
|--|--|
- II. Hemiptera.\* III. Lepidoptera. IV and V. Coleoptera.\*
- VI. Hymenoptera: Symphyta\* and Aculeata.\*
- VII. Hymenoptera: Ichneumonidae.\*
- VIII. Hymenoptera: Cynipoidea, Chalcidoidea and Serphoidea.
- IX. Diptera: Nematocera† and Brachycera. X. Diptera: Cyclorrhapha.\*

The following parts are now available:—

- Vol. I, Part 5. Dermaptera and Orthoptera. By W. D. Hincks. Price 3s. 6d. plus postage.
- Vol. I, Part 6. Plecoptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 9. Ephemeroptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 10. Odonata. By F. C. Fraser. Price 7s. 6d. plus postage.
- Vol. IX, Part 1. Diptera: Introduction and Key to Families. By H. Oldroyd. Price 7s. 6d. plus postage.
- Vol. IX, Part 2. Diptera, Nematocera: Families TIPULIDAE to CHIRONOMIDAE. By R. L. Coe, Paul Freeman and P. F. Mattingly. Price 20s. 0d. plus postage.

Parts marked † are on sale or in the press, those marked \* in preparation.

Orders for the complete series or for separate parts can be placed with the Registrar at the Society's rooms now, but prices can only be quoted for those parts already issued.

Fellows of the Society may purchase one copy at a discount of 25 per cent.; additional copies at the full published price.

STYLOPS, a Journal of Taxonomic Entomology.

1932-1935. Vols. 1-4 (all issued). Price £1 16s. 0d. each; to Fellows £1 7s. 0d.

ABSTRACT OF PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON. 1935. Nos. 1-6 (all issued). 3s. 0d.

HUBNER: A BIBLIOGRAPHICAL AND SYSTEMATIC ACCOUNT OF THE ENTOMOLOGICAL WORKS OF JACOB HUBNER AND THE SUPPLEMENTS THERETO. In 2 vols. By Francis Hemming. Price Vol. 1. 605 pp. £1 15s. 0d.; Vol. 2. 275 pp. 15s. 0d.

THE HISTORY OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1833-1933. By S. A. Neave, assisted by F. J. Griffin. Price 10s. 6d.

Published by THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON and sold at its rooms, 41, Queen's Gate, S.W. 7, price 1s. 0d.

PRINTED BY ADLARD AND SON, LIMITED, BARTHOLOMEW PRESS, DORKING.